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A radio talk by W. W. Vincent, chief, western district, Food and Drug Administration, delivered Thursday, August 21, 1930, through Stations KGO, San Francisco, KFI, Los Angeles and KHQ, Spokane, at 9:45 A.M. Pacific Standard Time.

I plan to tell you something about jams and jellies today. Something about the practices that have obtained in the manufacturing of jams and jellies. Something about those practices which have been largely discontinued by jam and jelly manufacturers because of the activities of your Food and Drug agents. Incidentally, I am going to tell you something about how to read jam and jelly labels.

Last week, I talked about sirups, and the week before that, fish---salmon and tuna. I have promised to place the names of you who write to me on our mailing list for "read the label" information. New correspondents will, in addition to the information on jams and jellies, receive all "read the label" information.

Let's see, a few weeks ago I told you the food business was the largest business in the world and that one large food concern had just completed a survey of the food business, ascertaining that the American public expends annually the enormous sum of twenty-one billion dollars for food. I believe I also told you that you were a stockholder in the Food and Drug Administration and should know what it is doing. Are you getting dividends on your investment? What is the expenditure you are being called upon to make in order to insure for yourself and family a food supply that is pure, wholesome and truthfully labeled, and a drug supply whose purity and proper branding is above suspicion?

My friends, I will venture the opinion that, all things considered, you have never made a better investment. How much do you think the service of your Federal Food and Drug Administration costs each individual in the United States per annum? I will tell you. It costs each and everyone of you just about one cent per year. My friends, what are the dividends? If we annually prevent the sale to you at an olive oil price of but one gallon can labeled "Pure Olive Olive" but which is adulterated with 50% of cottonseed oil, figured at today's prices, it means a saving to you of 3400% on your annual capital investment in the enforcement of the Federal Food and Drugs Act.

If you choose to ignore the monetary saving, you can not ignore the health consideration. The major improvements in food and drug manufacturing processes, and the improved quality and truthful branding of the finished products is directly attributable to the pressure felt by manufacturers under the application of the Federal Food and Drugs Act.

Folks, I believe you have gotten your money's worth. Just to illustrate, I want to tell you of some practices of years ago in the jelly, jam and preserve business. Many years ago certain seed distributors enjoyed a nice market for small seeds with jam manufacturers. I have seen a product labeled "Blackberry Jam" made from Timothy seed, apple juice, artificial color and flavor, together with a little phosphoric or some organic acid.

I have seen quantities of various so-called fruit jams and jellies that were made from apple juice or pectin, together with added acid and artificial flavor and color. As a matter of fact, it is only within recent years that analytical methods were so perfected in your Government laboratories as to permit of detection, by analysis, of added pectin used as a substitute for fruit in fruit jams, jellies and preserves. About 1921, after the analysis of hundreds of samples of authentic fruits and berries of all varieties, two chemists in our Denver Laboratory perfected methods of analysis that would clearly show the substitution of cheap fruit juices or pectin solutions for the expensive fruit and berry juices. Of course, we could always detect the artificial color and some of the artificial flavors.

It was in 1922 your Food and Drug agents began to clean up the jam, jelly and preserve business. Shortly after that campaign started numerous seizures of jams, jellies and preserves were made at various points in the United States, and from the output of a good many manufacturers. My friends, not a manufacturer whose product was seized has seen fit to contest these seizure actions. They admitted that their products were adulterated and misbranded. I therefore haven't an interesting court case to tell you about. Of the jellies seized, a good many, in addition to being short weight, were found to be but pectin solutions. Some contained artificial color. Some labeled as, for example, "Strawberry" contained just enough strawberry juice to give the product color. Almost universally they contained an added acid such as phosphoric, citric, or tartaric. Several contained either sulphurous or sulphuric acid. The use of alum as an acidulant was also found.

You have heard me mention pectin. Perhaps you don't know what it is. Pectin is a complex carbohydrate found in various fruits. Material quantities are present in apples, also the peels of and the rag of citrus fruits. Pectin when mixed with water, sugar and acid in proper proportions, forms a jelly. Some fruits, such as pineapple, cherries and pomegranates, contain very little pectin, while currants, raspberries, strawberries and blackberries contain a fair amount. With some or all of the fruits I mentioned you have probably upon occasion had difficulty in getting your jelly to jell satisfactorily. You could have easily secured the desired jelling had you added a little green apple juice, or the white of an orange peel, or some commercial pectin, supplying in this way the deficiency of natural pectin in the fruit. Some loganberries, peaches, figs and plums contain a good amount of pectin. Fruits when over-ripe contain less pectin than when green or ripe.

The commercial manufacture of pectin from apples and citrus fruit was started shortly after the war period. The introduction of pectin among jelly, jam and preserve manufacturers naturally led to its use as a substitute for the fruits and fruit juices. Prior to the widespread use of pectin some manufacturers used as an adulterant a water extract from apple waste from vinegar manufacture or hot pressed apple juice. Pectin in a measure supplanted the use of these products because it carries no flavor of its own to the finished article and, further, it is presented to the manufacturer in a form convenient for immediate use.

Now, before showing you just what the substitution of pectin or pectin solution in the form of a hot apple juice extraction means to the manufacturer,



also to your pocket book, when he substitutes them for strawberry, raspberry and blackberry juices, it is first necessary that I tell you what the Government requirements are for the pure products; also, what compounds and imitations are and how they should be labeled. You must know this in order that you may become a discriminating buyer.

FRUIT JELLY is the semi-solid gelatinous product made by concentrating to a suitable consistency the strained juice or strained water extract from fresh fruit, from frozen fruit, or from canned fruit, or from a mixture of two or more of them, with sucrose, that is, cane or beet sugar.

FRUIT PRESERVES, or FRUIT JAM, is the product made by cooking to a suitable consistency fresh fruit, frozen fruit, canned fruit, or mixtures of them, with sugar or with sugar and water. Not less than 45 pounds of fruit may be used to each 55 pounds of sugar. Where the fruit is whole or in relatively large pieces the product is customarily designated a preserve. If the sugar is wholly displaced by glucose, the product must be labeled as a glucose or corn sirup, fruit jelly, or, fruit preserve, as the case may be.

FRUIT BUTTERS are generally made from fruit juice together with properly prepared fruit with or without the addition of sugar and spices or vinegar. The product is, of course, evaporated to a semi-solid mass and conforms in name to the variety of fruit used.

You note the standards I have given you do not contemplate the use of dried fruits by manufacturers of these types of products, but if dried fruits are used, the label should so indicate.

Products containing less than 45 pounds of fruit to each 55 pounds of sugar are not jam or preserve, and should be labeled, for example, "Strawberries in Sugar Not a Preserve".

Now, as to compounds. This class of products contains between 25 and 45 parts of fruit, usually 25, the minimum requirement, to each 55 parts of sugar, and relatively large quantities of added pectin, which in effect serves to stretch the fruit. Labels to describe such a product often read: Compound Pectin, Sugar and Strawberry (or other fruit) Preserve (or Jam) Prepared from 20% pectin solution, 55% sugar and 25% Strawberry (or other fruit)!!.

Right here I want to mention that you will encounter some few of these compounds labeled somewhat as follows: "Compound of Pectin Sugar and Strawberry Preserves Contains 45% Pectin and Sugar Sirup and 55% Strawberry Jam". I don't know whether you got the distinction between that type of label and the one previously mentioned, but, if you did not, here it is: The latter makes reference to "55% Strawberry Jam", whereas the former label specifies but 25% of fruit. The 55% jam label is a statement of fact but the hasty housewife reader, we found upon investigation, believed she was getting a product containing materially more than 25% of actual fruit. I might just mention that the compounds on the markets are perfectly pure and wholesome and there is nothing wrong with them if they are labeled correctly.

You do not save money when you buy a compound jam or preserve because that extra<sup>sugar</sup> costs you about 300% more than you would pay for it did you buy it as sugar.

Now, for the imitation products. Jams and preserves which contain less than 25 parts of fruit to each 55 parts of sugar, the balance being made up with pectin solution, either with or without added color and perhaps flavor, together with added acid, constitute this class. Compounds as previously described, if artificially colored, likewise become imitations.

If you will read the label carefully you will find they are designated as imitations together with a statement of their ingredients. After that you can decide whether you want them at the price offered.

Before leaving this subject of jams and jellies I just want to mention that you will occasionally note on jelly labels the words "Pectin added". This means the manufacturer has added a small amount of pectin because of deficiency of that substance in the fruit used. The Government does not object to this, providing the product contains the full amount of fruit juice.

If you encounter jellies labeled, for example, "Pectin-Strawberry Jelly", it means a material amount of fruit juice has been displaced by pectin. It should sell for less money than genuine "Strawberry Jelly".

Jellies that bear the names of two fruits, for example, "Apple and Strawberry" contain juice from both fruits, the one named first predominating.

You may encounter products labeled "Imitation Jelly". If so, the ingredients should be given on the label. Most "Imitation Jelly" goes to bakers and confectioners.

The words "Added Acid", or "Fruit Acid Added", where appearing on labels, means the manufacturer has added a harmless organic acid. The primary purpose of adding acid is for giving consistency and tartness.

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This concludes my eleventh talk. If you are interested in becoming a discriminating buyer, and you have not already done so, write to W. W. Vincent, U. S. Food and Drug Laboratory, San Francisco for our "Read the Label" information.

Next week I shall tell you about a big steal in a little way and, in addition, I shall tell you more about how to read labels.